Contribution ID: **662**   Type: **Invited talk in the parallel session**

Data-driven Reconstruction of the Late-time Cosmic Acceleration with f(T) Gravity

Wednesday, 7 July 2021 07:30 (20 minutes)

Along with the accumulated cosmological observations, while the standard paradigm of modern cosmology has been verified with high precision, some new challenges such as the H_0 tension appear. To address these issues, we in this article reconstruct the free function of $f(T)$ gravity in a model-independent manner using the combined observational data. The obtained function is consistent with the standard ΛCDM cosmology within 1σ confidence level, however the best-fit value experiences oscillatory features. Similar oscillatory dark-energy scenarios are known to be in good agreement with observational data, nevertheless this is the first time that such a behavior is proposed for $f(T)$ gravity. Finally, since the reconstruction procedure is completely model-independent, the obtained data-driven reconstructed $f(T)$ form could release the tensions between ΛCDM estimations and local measurements.

Primary authors: REN, Xin (University of Science and Technology of China); CAI, Yi-Fu (University of Science and Technology of China); Prof. SARIDAKIS, Emmanuel (National Observatory of Athens); Mr WONG, Thomas Hong Tsun (The University of Hong Kong)

Presenter: REN, Xin (University of Science and Technology of China)

Session Classification: Extended Theories of Gravity and Quantum Cosmology

Track Classification: Alternative Theories: Extended Theories of Gravity and Quantum Cosmology